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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/718,738	11/21/2003	Tianlong Chen	3073.016	1794

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EXAMINER

MARIAM, DANIEL G

ART UNIT PAPER NUMBER

2625

DATE MAILED: 03/21/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/718,738	Applicant(s) CHEN ET AL.	
	Examiner DANIEL G. MARIAM	Art Unit 2625	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 19 and 20 is/are rejected.
- 7) ☒ Claim(s) 16-18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Objections

1. Claim 8 is objected to because of the following informalities: in claim 8 line 3, the limitation "on" appears to be misspelled, and should be changed to "one". Likewise claim 19 recite the limitation "the said" in various portions of the claim, and one of them should be deleted. Appropriate correction is required

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claim 8 recites the limitation "said first image" in line 4. There is insufficient antecedent basis for this limitation in the claim.

Since claims 19-20 directly or indirectly depend on claim 8, they are also rejected under 35 USC 112, second paragraph, for the same reason set forth above for claim 8.

4. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

5. Claim 2 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. While claim 2 recites the limitation "identifying a group of images in said database having an index value corresponding

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to a particular index group greater than a threshold value”, the specification says nothing about this feature.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Berriss, et al. (Patent Application Publication 2003/0086627).

With regard to claim 1, a method for indexing a plurality of images in a database, each image in said database having within it an object of the same type, color image or dominant color image or orange object (See for example, Figs. 3-4), comprising the steps of: digitizing each of said plurality of images in said database into an array of descriptors, separating said descriptors into a plurality of index groups, i.e., clusters/groups, calculating for at least one of said plurality of images in said database an index value, i.e., mean value corresponding to one of said index groups (See paragraph 0026 through paragraph 0050). Although Berriss, et al does not elaborate that each image in said database having within it an object of the same type, it would have been obvious if not inherent to an ordinary artisan to recognize the object/s of described in Berriss, et al to be of the same type. For example, at paragraph 0061, Berriss, et al derives descriptors for each image having the same type of objects, such as a car, a house or a person.

With regard to claim 2, a method for indexing a plurality of images in a database according to claim 1 further comprising the step of identifying a group of images in said database having an index value corresponding to a particular index group greater than a threshold value (See for example, paragraph 0045).

With regard to claim 3, a method for indexing a plurality of images in a database according to claim 1 wherein said index value is a function of at least two of said descriptors (See for example, paragraph 0029 and paragraph 0050; and Figs. 4-5).

With regard to claim 4, a method for indexing a plurality of images in a database according to claim 3 wherein said function comprises averaging, i.e., mean value, at least two of said descriptors (See for example, paragraph 0029 and paragraph 0065).

With regard to claim 5, a method for indexing a plurality of images in a database according to claim 3 wherein said function comprises averaging four of said descriptors (Which broadly reads on n collection of mean values).

With regard to claim 6, a method in accordance with claim 1, wherein said object type comprises a human face (See paragraph 0061, where Berriss, et al states: " Descriptors can be derived for the whole of an image or sub-regions of the image such as regions of specific shapes and sizes. Alternatively, descriptors may be derived for regions of the image corresponding to an object or objects, for example, a car, a house or a person. In either case, descriptors may be derived for all of the image or only part of it." What this means is that, a descriptor can be

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derived for the person as a “whole” or part of the person, which indeed includes the person’s face).

With regard to claim 7, a method of comparing a target image, i.e., query image, to a database of a plurality of digitized images, i.e. database or collection of reference images, comprising the steps of: digitizing a target object in said target image into an array of descriptors, calculating an average, i.e., mean, of at least a first descriptor and a second descriptor from said target object (See for example, paragraph 0025-0029); and comparing, i.e., similarity, matching, and/or comparing, said calculated average to a threshold value (Figure 2; and paragraph 0048) .

With regard claim 8, a method for image indexing comprising: digitizing a target image, i.e., query image, having an object within it into an array of descriptors, digitizing at least on source image in a database, i.e., database or reference images, into an array of descriptors each said source imaging having an object within it and said object in said first image and said object in said at least one source image being of same type (See for example, paragraphs 0025-0029; and paragraph 61); wherein said array of descriptors from said first image and said array of descriptors from said at least one source image comprise the same type and the same number of descriptors, and separating said descriptors into index groups, i.e., clusters, wherein said index groups each have an index value (See Paragraph 0029; and paragraph 0050, lines 6-9).

Claim 9 is an analogous variation of claims 1 and 8, and is rejected the same as claims 1 and 8. Thus, arguments similar to those presented above for claims 1 and 8 are not repeated herein, but are incorporated by reference.

Claims 10 and 11 are rejected the same as claims 6 and 4 respectively. Thus, arguments similar to those presented above for claims 6 and 4 are respectively applicable to claims 10 and 11.

With regard to claim 12, a method according to claim 9, wherein said index group comprises a consecutive number Y of said descriptors (See Figs. 4-5).

With regard to claim 13, a method according to claim 12, further comprising selecting Y (See paragraph 0050).

With regard to claim 14, a method according to claim 9, wherein said index group comprises every other Z descriptors wherein Z is an integer (See Figure 4).

With regard to claim 15, a method according to claim 14, further comprising selecting Z (See paragraph 0050; and Fig. 5).

Allowable Subject Matter

8. Claims 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The closest prior art of Berriss, et al. does not disclose or fairly suggest providing a first index level, a second index level, and a pre-set number; providing a image database having a source image; wherein said first index level has an index value, said second index level has an index value, said first index level having a list of buckets, said second index level having a list of buckets, and said buckets each having a counter; if said counter of said bucket in said first index level is larger than said pre-set number, then said bucket in said first index level has a second index level, and said counter is the sum of counters of said buckets

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in said second index level; if said counter of said bucket in said first index level is less than or equal to said pre-set number, then said bucket in said first index level has a list of image templates, and the number of said image templates is said counter. It is for these reasons and in combination with all the other elements of the base claim, that claims 16-18 would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US Patent Numbers: 5802361, **5819288** (very close to applicants' invention, see entire document: (also 5852823)), 6564225; and patent application publication 2002/0039447.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DANIEL G. MARIAM whose telephone number is 571-272-7394. The examiner can normally be reached on M-F (7:00-4:30) FIRST FRIDAY OFF.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, MATTHEW BELLA can be reached on 571-272-7778. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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A handwritten signature in black ink, appearing to read 'Daniel G. Mariam', with a long horizontal flourish extending to the right.

DANIEL G MARIAM

Primary Examiner

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March 16, 2006